The Role of a Design Intervention on Shifting Social Norms and Promoting Veganism in Restaurant Menus

Lucia Wajchenberg (S4915429)

BSc. Global Responsibility and Leadership

Campus Fryslan, University of Groningen, The Netherlands

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Supervisor: Dr. Josefine Geiger

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Abstract

The food choices that we make have a significant impact on the intricate web of global challenges that humanity faces. Specifically, adopting a plant-based diet with little to no animal products is a more sustainable, ethical, and healthy option. However, transitioning from an omnivore to a vegan diet can be hampered by meat and dairy consumption, being accepted and endorsed as the social norm. This study investigates the impact of changing the default options and design in restaurant menus to promote plant-based options as the social norm rather than the alternative, to test whether these changes in menu format lead to an increase of vegan orders. Through an online questionnaire, participants were randomly assigned to one of two conditions: an experimental group that was presented with a menu that portrayed veganism as the social norm, and a control group where animal products were designed as the norm. Results confirmed that participants exposed to the experimental condition ordered significantly more vegan appetizers (81% vs. 53%) and drinks (93% vs. 77%) compared to the control group. Although no significant differences were found in the main dishes and desserts, descriptive data indicated a trend towards more plant-based choices in the experimental group. The results of the study indicate that changing menu formats can influence consumer choices towards a more sustainable diet. Based on these findings, interventions aimed at shifting social norms to promote a plant-based diet can be further designed and examined.

Keywords: food choices, pro-environmental behavior, plant-based diet, meat consumption, social norms, default options, menu design, online questionnaire

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Introduction

In the intricate and interconnected realm of humanitarian, ethical, and environmental issues on our planet, our daily food choices play a significant role (FAO, 2006). This is particularly clear and problematic when examining the implications and scale of meat and dairy consumption. Every year, humans consume 360 million tonnes of meat (Roser, 2023). As a result, there are major detrimental effects on the environment and ecosystems, such as biodiversity loss, habitat destruction, freshwater withdrawal, and pollution (Kortetmäki, Oksanen, 2021). Additionally, the production of animal products contributes to about half of food-generated greenhouse gas emissions (European Commission, 2006) and 18% of the world's carbon footprint (FAO, 2006), making them the foods with the biggest environmental impact (European Commission, 2006).

The implications of meat and dairy consumption are not limited to its environmental consequences: the exploitation of animals that is inherent to these foods raises several ethical concerns (Roser, 2024). Every year, billions of livestock animals live a life of suffering in inhumane and distressing circumstances that end with their slaughter. Not only is this an issue for the amount of feed, water, and fields needed to sustain the lives of animals until their slaughter, but it also raises several ethical concerns regarding animal welfare, a dilemma that is often overlooked in mainstream media (Roser, 2024).

Moreover, consuming red and processed meat has been consistently linked with a series of health risks for humans (Richi et al., 2015). Long-term consumption of these meats is associated with increased risks of mortality, cardiovascular disease, colorectal cancer and type 2 diabetes (Richi et al., 2015). On the other hand, a well-balanced plant-based diet, supplemented with vitamin B12, has been recognized as a healthier choice (Greger & Stone,

2016). Specifically, a whole-food, plant-based diet which reduces or completely cuts off the intake of animal products, processed foods, and added sugars, has been shown to offer protection against a number of chronic diseases and promote longevity (Greger & Stone, 2016).

Veganism stands for the principle of living without exploiting animals, and it offers a more sustainable, ethical, and healthy alternative to the conventional omnivore diet (North et al., 2021). However, promoting this diet and lifestyle within societies where unsustainable, unhealthy, and unethical dietary habits are perpetuated and accepted as the norm, poses several challenges. In fact, in our society, consuming animal products is considered the standard behavior (Bryant et al., 2022). Conversely, adopting a plant-based diet is often perceived as deviating from the widely acknowledged and accepted eating behavior. As a consequence, transitioning from an omnivore to a vegan diet involves more obstacles than adjusting to new eating habits and taste preferences: this change in behavior is accompanied by a complex web of social challenges (Bryant et al., 2022).

However, among these challenges lies the potential to shift the existing social norms to promote a plant-based diet, rather than presenting it as the alternative to meat and dairy. This paper draws on theories of social influence, social identity and minority influence to explore the challenges associated with the adoption of a vegan diet in a society where consuming animal products is considered the norm. Social norms are defined as the belief systems that govern the behaviors of individuals, and they influence our decision making-processes in countless ways (Cialdini & Trost, 1998). However, these behaviors practiced by the majority and regarded as norms can be challenged and changed by minorities (Moscovici, 1980). This paper examines and consequently tests the effectiveness of switching

social norms as a way to alter eating habits behaviors, from eating animal products to veganism. In particular, the aim of this research is to explore how changing restaurants' menu design can subtly encourage consumers to choose more plant-based options.

This paper uncovers how the psychological barriers related to social norms influence dietary choices. It contributes to the already existing body of research on interventions to promote plant-based diets and pro-environmental behavior. This study employs a unique approach that tests the effectiveness of the combination of changing default options and priming graphic design. This comprehensive and innovative approach is designed to strengthen the association in the minds of consumers between the modified menu and the idea that ordering vegan is the preferred option. Moreover, this strategy contributes to fostering sustainable behavior without compromising individuals' freedom of choice or causing them to feel threatened by a change of diet. The research question that I seek to answer is:

"*Does changing the standard menu format to promote plant-based options as the default choice lead to more plant-based orders?*"

My hypothesis is that individuals presented with a menu designed to promote sustainability, where vegan options are set as the default, will choose more plant-based dishes compared to those presented with a menu where eating animal products is the standard. The results of this study have important implications for sustainability, public health, and animal welfare.

In order to answer the research question, a comprehensive literature review will set the basis for the framework of this research. Theories from social influence, as well as strategies aimed at shifting the existing social norms, and the use of priming in the field of graphic design, will be explained. Afterwards, the methodology employed in this study, which was

conducted through an online questionnaire, will be discussed. Then, the survey's results will be presented and the hypothesis analyzed in the discussion. The limitations of the research, including the online setting of the experiment, the small sample size, and individual taste preferences, will consequently be addressed. Ultimately, the research question will be answered in the conclusion.

Literature Review

Social Norms and the Influence of Meat Consumption

Social norms constitute a fundamental concept in the field of social influence and are defined as the belief systems governing how individuals should (or should not) behave (Cialdini & Trost, 1998). Our daily decisions are not merely products of our individual cognitive processes, instead, they are intricately shaped by the social norms of the sociocultural context in which we exist (Hewstone et al., 2020). Influences arising from our upbringing, familiar dynamics, and social circles, among other contextual factors, play pivotal roles in shaping our decision-making processes (Nguyen & Platow, 2021). It is crucial to recognize dietary choices as integral components of these contexts and decisions, as they are strongly influenced by the established norms within societies. One of the most prominent barriers faced when transitioning to a plant-based diet lies in the psychological and social dimensions associated with the prevailing societal norm of eating meat (Nguyen & Platow, 2021).

As humans, we adhere to social norms because they serve key functions that help us integrate into society (Hewstone et al., 2020). The goal of social norms is to coordinate behavior and interactions among individuals by establishing what is acceptable (or not) to do

in relation to others (Hewstone et al., 2020). Specifically, social norms help us achieve uniformity within groups, which serves two functions of group membership: social reality testing and group locomotion (Festinger, 1950). Social reality testing involves the validation of beliefs through social comparison with others in the group. This means that in situations that are novel, ambiguous or objectively unclear, adhering to established social norms reduces uncertainty and reassures individuals that their behavior is appropriate, correct, and socially desirable. This validation is crucial for the group to progress, facilitating what Festinger (1950) called group locomotion: the coordination of goals and activities among group members, which is necessary for effective and efficient group functioning.

There are two different types of norms: descriptive and injunctive norms (Cialdini, Kallgren, & Reno, 1991). Descriptive norms inform us about how others act in similar situations, such as everyone dressing professionally in the workplace. On the other hand, injunctive norms define what behavior should be performed (Cialdini, Kallgren, & Reno, 1991), such as staying quiet during a lecture. Eating animal products is primarily a descriptive norm (Sharps et al., 2021): since it is a behavior that is regularly practiced by the majority of people, it is seen as the standard (Nguyen & Platow, 2021). However, it is also considered an injunctive norm (Sharps et al., 2021), as it is accepted as the proper behavior to be a part of a specific culture, depending on the culture and the potential cultural value of foods containing animal products (Nguyen & Platow, 2021). Nguyen & Platow's (2021) research investigated the potential influence of national meat-eating norms on people's attitudes and behaviors. Their findings showed that descriptive norms significantly influenced attitudes, intentions, and behaviors related to meat consumption. On the other hand, injunctive norms influenced attitudes towards eating meat, but not behaviors or intentions. Specifically, stronger nations'

meat-eating descriptive norms led to weaker intentions to eat vegetarian meals among participants with high national social identification. This suggests that national meat-eating norms and social identification play significant roles in shaping attitudes and behaviors related to meat consumption (Nguyen & Platow, 2021).

In Western cultures, in particular, there is a strong attachment to meat, and the normalization of its consumption further reinforces this trend (Bryant et al., 2022). Meat serves as a symbol of tradition, heritage, and pride, as it is strongly attached to national identities (Nguyen & Platow, 2021). Therefore, consuming it is a way for people to adhere to broader cultural norms and express their national social identification (Bryant et al., 2022). On the other hand, the descriptive and injunctive nature of meat as a dietary social norm hinders efforts to adopt a plant-based diet. It may serve as a form of avoidance, meaning a barrier to developing interest in the issue of consuming animal products in the first place (Bryant et al., 2022). For many, the overwhelming normality of eating animal products serves, by itself, as a good justification for it (Piazza et al., 2015). For this reason, there is often no external motivation to question or address meat and dairy consumption as an issue (Bryant et al., 2022).

However, even if an individual has accepted the arguments for veganism, going vegan means not following the behavior that is culturally expected to be followed (eating meat), and therefore carries a social cost (Bryant et al., 2022). While complying with norms typically goes unnoticed, violating them often generates negative responses (Hewstone et al., 2020). In fact, norms become particularly salient only when violated, and individuals who deviate from norms without a valid explanation are often subjected to negative evaluations, such as pressure to change and hostility within their social networks (Hewstone et al., 2020).

According to Bryant et al. (2022), adopting a vegan lifestyle can indeed be perceived as a violation of the social norm as it deviates from the widely accepted behavior of eating animal products, therefore it carries potential social costs. These consequences are particularly negative because they question foods that are deeply rooted in both historical and cultural traditions (Nguyen & Platow, 2021). Therefore, abstaining from eating meat could potentially be seen as a violation of culture and history itself, leading to marginalization (Bryant et al., 2022).

Overall, people agree and conform to the expectations of others, while simultaneously avoiding behaviors that will lead to social punishment or disapproval, because of a need for social approval and harmony (Deutsch and Gerard, 1955). When eating animal products is the social norm, therefore the behavior that individuals mainly practice and expect from others, adopting a plant-based diet leads to negative consequences in the social sphere. An important aspect of social norms is that the uniformity that they aim to achieve increases quite drastically as the number of members in the majority group increases (Asch, 1951), and this effect is even greater when people perceive themselves as integral members of a group, as opposed to when they do not (Asch, 1951). When the norm is practiced as broadly as in countries, continents, and cultures (Nguyen & Platow, 2021), detaching from it will result in high social costs.

Minority Influence of Plant-Based Diets

However, the extent to which a behavior is widely spread does not always seem to be a prerequisite for norm conformity: according to Moscovici (1980), minorities can also influence majorities by challenging the status quo and the self-fulfilling nature of current

norms (Bolderdijk & Jans, 2021, while providing alternative norms (Malta et al., 2023). By deviating from the status quo, they show that an alternative path is possible: an increase in the number of vegetarians, for instance, signals to the majority that high levels of meat consumption are not a 'natural' or lasting feature of prosperous societies per se (Bolderdijk & Jans, 2021; Judge et al., 2022). Since in many countries, veganism has experienced a rapid increase in popularity, it suggests that individual vegans might collectively contribute to a potential source of social change (Bolderdijk & Jans, 2021; Judge et al., 2022).

Therefore, rather than promoting veganism as an alternative within a predominantly meat-centric world, it may be more feasible and effective to shift the social norm towards veganism instead. This framework aligns with the central focus of this research, which aims to explore the efficacy of presenting an alternative menu that positions veganism as the social norm. Instead of promoting vegan dishes within a menu primarily focused on meat and dairy products, this study aims to test whether proposing veganism, typically considered a minority choice, as the prevailing social norm, can influence the individuals who typically perpetuate the behavior adopted by the majority of people (consuming animal products) into opting for plant-based dishes.

Shifting the Default to Plant-Based Options

Default options in social contexts are perceived as parallels with social norms (Davidai et al., 2012; Everett et al., 2014), and can be interpreted as the recommended option, or as carrying implicit approval (McKenzie et al., 2006; Everett et al., 2014). Choice options can be described as the default when they are in some way pre-selected and therefore framed as the standard (Taufik, 2022). In restaurant settings, meat is usually perceived as the go-to

option, meaning consumers often choose it by default, without much deliberation. This perception is further amplified and reinforced when meat options have a more visible location on the menu; while plant-based alternatives are available but on request; or when plant-based meat is marketed as a direct alternative to meat. As a result, consumers tend to primarily consider plant-based options as alternatives to the default choice of meat. However, this disposition hinders a change in dietary habits toward higher consumption of plant-based alternatives (Taufik, 2022).

De Vaan et al., (2019) found that offering an all-vegetarian menu with the possibility to add meat to each dish increased the uptake of vegetarian dishes without triggering resistance. Taufik (2022) analyzed how consumers' tendency to eat meat while dining out can be countered by subtly redesigning the menu in a way that frames the plant-based option as the default while leaving all options (including the equivalent meat dish) on the menu. This approach promotes sustainable behavior while preserving individuals' decision-making. The results of the study showed that by switching the social norm of eating meat with the alternative of eating plant-based, a significant percentage of the participants adhered to the dish representing the social norm, regardless of whether it was meat or plant-based. By simply altering the default mindset of consumers, it becomes possible to influence behaviors that typically occur without much conscious thought. These approaches have been shown to be effective at changing food choices, often without consumers being aware that their decisions have been influenced (Taufik, 2022). Examples of manipulations include redesigning menus, labeling products with symbols, signs or language, and altering the placement of food products (Parkin & Attwood, 2022).

De Vaan et al., (2019)'s findings show that offering vegan or vegetarian dishes with

the option to add meat can reduce meat consumption without provoking reactance. Taufik (2022) demonstrated that changing the default option from eating animal products to veganism increases plant-based food consumption while preserving autonomous decision-making. Therefore, shifting the default option to plant-based foods can be a more effective strategy for promoting sustainable, ethical, and healthier eating habits than direct attempts to change behavior.

In line with the findings of De Vaan et al., (2019) and Taufik (2022), this research aims to adopt the approach of positioning plant-based foods as the norm rather than an alternative to meat. Moreover, this study will explore the effectiveness of such approaches mixed with a change in the design of the menu, in a way that cues sustainability. The goal of this study is to potentially reduce the consumption of animal products in restaurant settings, by adopting an approach that tests the effectiveness of the combination of a change in default options and menu design on the choices of consumers.

Graphic Design to Prime Sustainability

In light of the urgent need to reduce the harm caused by meat and dairy being the current social norm, it becomes essential to explore innovative and creative solutions that can subtly influence dietary choices. Graphic design takes ideas, concepts, text and images and presents them in a visually engaging form (Ambrose et al., 2020). It imposes an order and structure to the content in order to facilitate and ease the communication process while optimizing the likelihood that the message will be received and understood by the target audience (Ambrose et al., 2020). It is used for advertisements, publishing, television, and many other media (Kolosnichenko et al., 2022). Graphic design can be utilized as one of the

indirect markers of social transformation of society. Through the analysis of plots, color palettes, shapes, expositions and compositions, graphic design has the potential to trace changes in the social environment (Kolosnichenko et al., 2022).

Besides, in the realm of design and social psychology, there is a growing interest in utilizing implicit stimuli to influence behavior through everyday products (Cash et al., 2017). Priming, for instance, plays a significant role in shaping human behavior, as it involves influencing unconscious thoughts by activating basic associations, such as societal norms (Kay et al., 2004; Cash et al., 2017). Priming can be defined as the influence of a specific cue on a target, which activates an unconscious response (Cash et al., 2017).

When priming is applied to graphic design, it involves using specific design elements to make the target audience respond in a certain way to the context they are shown. This research aims to prime the graphic design of menus in order to activate societal norms and basic associations. The color green, for instance, is associated with plants, healthiness, and sustainability (Sucapane et al., 2021). Foods shown in predominantly green packaging are generally perceived as healthy (Huang & Lu, 2015) and more environmentally friendly (Seo & Scammon, 2017; Sucapane et al., 2021). Therefore, these colors and imagery are used in the graphic design of the experimental menu of this study to promote plant-based alternatives, as a way to influence perceived social norms. On the other hand, the color red is associated with meat (Sucapane et al., 2021), therefore it will characterize the captions and colors of the control menu, to confirm the social norm of an omnivore diet as the social norm. The potential of priming graphic design allows customers to preserve freedom of choice in their dietary decisions while minimizing potential resistance to change.

Current research

Recognizing the challenges associated with promoting sustainable, healthy, and ethical dietary habits in meat-centric societies is crucial. At the same time, addressing the role of social norms in shaping dietary choices lays the foundation to shift norms towards a more plant-based diet. This study builds on previous research on promoting plant-based foods instead of meat and dairy consumption as the social dietary norm. Specifically, on how default options affect social norms and behaviors around dietary choices (De Vaan et al., 2019; Taufik, 2022), and priming as a way to activate basic associations and influence behavior (Sucapane et al., 2021). Additionally, it offers a unique and innovative approach that combines previous research with the manipulation of the graphic design of the menu. This research's objective is to investigate whether a change in menu design, specifically intended to shift the perceived social norm from meat and dairy consumption to veganism, leads to a significant difference in the frequency of meat and plant-based orders among customers in restaurant settings. Precisely, the research question is: "*Does changing the standard menu format to promote plant-based options as the default choice lead to more plant-based orders?*" The purpose of this research is to test the hypothesis that participants presented with an experimental menu, in which vegan options are set as the default and the graphic design cues sustainability, will choose more plant-based dishes compared to those presented with a control menu, where meat and dairy options are presented as the norm.

Methods

Study Design

This quantitative study employs a randomized controlled trial design to investigate individuals' food ordering behavior. In spring 2024, a questionnaire built with Qualtrics was distributed among online platforms. Participants were randomly assigned to one of two conditions: a control group with a standard menu format, showcasing an omnivore diet as the social norm, and an experimental group with a modified menu format, reflecting altered social norms which promoted vegan dishes as the standard. Each respondent was asked to select one dish from each category of the menu: appetizers, main dishes, desserts, and drinks. Participants made their selection from a provided list of options, which included a variety of dishes from different cuisines to ensure a variety of choices for participants to consider.

The Independent Variable of this study is the design of the menus, whereas the Dependent Variable is the frequency of plant-based versus meat-based orders. I hypothesize that participants presented with the experimental menu (vegan options as the norm) will choose more plant-based dishes compared to those presented with the control menu (meat and dairy options as the norm). The moderators of this study are dietary habits and affiliation with Campus Fryslân. I am interested in finding out whether individuals following a specific diet might be more or less susceptible to the manipulations of the menu, particularly between flexitarians and omnivores. Moreover, different dietary social norms in Campus Fryslân might influence the results of the participants belonging to this group, compared to individuals who have never attended the Campus.

Participants & Procedure

A total of 111 participants filled in the questionnaire, which was shared through online platforms and groups. One incomplete survey was excluded from the sample, therefore 110 participants were left and considered in the analysis. Regarding gender, a total of 28 males, 77 females, 1 non-binary, and 4 individuals who preferred to not disclose their gender completed the survey. In terms of English proficiency, 72 participants reported speaking English daily, while 38 did not. Next, 45 participants currently study or have previously studied at Campus Fryslân, while the remaining 65 individuals have not. Participants were eventually asked about their dietary habits: 5 of them reported being vegan, 24 were vegetarian, 6 were pescatarian, 18 were flexitarian, and 57 omnivores. The item of age was accidentally removed from the questionnaire.

The survey started with a short explanation of the questionnaire and the reasons behind it (see Appendix 1). However, the real reason for the study remained hidden from the participants until after the completion of the test. Participants were initially told that they would help in understanding food preferences in restaurants and consumer behavior. After the initial explanation of the research, respondents were informed of their rights and must have agreed and consented to take part in the study. Informed consent was obtained from all participants prior to the questionnaire. Consequently, participants were randomly assigned to one of the two menus and instructed to imagine themselves dining at a restaurant and selecting one item from each section of the menu: appetizers, main dishes, desserts, and drinks. Afterwards, they were asked about socio-demographics. In the final part of the questionnaire, after submission, participants were thanked for their participation and debriefed about the actual purposes behind the research.

Materials and Design

Participants were randomly presented with one of two different menus, each depicting and reflecting a distinct social norm attached to food choices. The control menu followed conventional norms (see Figure 1). Therefore dishes containing animal products were prominently featured at the top of each course, and chef recommendations emphasized one option that was defaulted with meat but could be made vegan on request, and one meat-based dish by default. Moreover, the background and captions of the menu were in different tones of the color red, which is associated with meat; whereas vegan dishes were labeled explicitly as "vegan" in the color green.

Figure 1. Page 1 of the Control Menu: Eating Meat as the Social Norm

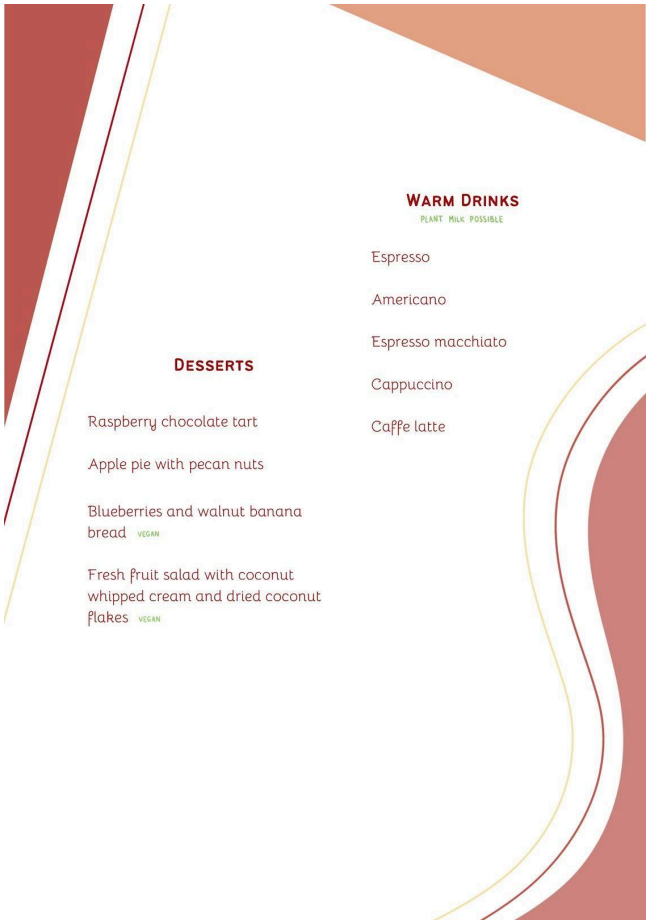

Figure 1. Page 2 of the Control Menu: Eating Meat as the Social Norm

On the other hand, the experimental menu challenged traditional norms (see Figure 2). It showcased vegan dishes as the primary options at the top of each section, accompanied by chef recommendations highlighting one dish that is defaulted as plant-based but could be requested with meat, and one plant-based dish by default. Dishes containing animal products were labeled as such through the symbol of a cow in the color red, which stood for "meat". Similarly, the milk-containing drinks offered on the menu were paired with icons showcasing the different types of milk that participants could choose from (in the following order: soy, oat, almond, and eventually cow). The icons for soy, oat, and almond milk were colored

green, matching the different shades of green applied to the menu's background. In contrast, the symbol representing cow milk was colored in blue to differentiate it from the one in red standing for meat. The background and captions of the menu featured different tones of green and were decorated with different elements from nature such as leaves and flowers. This choice reflects the association of the color green and plants with sustainability.

Figure 2. Page 2 of the Experimental Menu: Eating Vegan as the Social Norm

Figure 2. Page 2 of the Experimental Menu: Eating Vegan as the Social Norm

The Dependent Variable, namely the frequency of plant-based versus meat-based orders, was measured by assigning each dish in both experimental and control conditions to either a vegan or non-vegan category. Afterwards, chi-square tests were run to determine the significance of the manipulation of the menu. Moreover, the percentages of vegan dishes chosen in the experimental group for each category (appetizers, main dishes, desserts, and drinks) were calculated. Overall, across all participants 68% of individuals chose vegan

appetizers, 56% chose vegan main dishes, 40% chose vegan desserts, and 86% chose vegan drinks.

After completing the dish selection, respondents were asked about their gender, familiarity with English (whether they speak it daily or not), enrollment at Campus Fryslân, and their dietary habits. The diet options from which participants could choose were as follows: vegan ("I do not consume any animal products"); vegetarian ("I do not consume meat, but I consume other animal products such as dairy and eggs"); pescatarian ("I do not consume meat except for fish and seafood"); flexitarian ("I occasionally eat meat, but it's not a regular part of my diet"); omnivore ("I consume a variety of foods including meat, fish, dairy, and plant-based foods"); or other (participants could specify their diet).

Data Analysis

Data collection was conducted anonymously through the online questionnaire platform Qualtrics. The results of the questionnaire were analyzed through the use of IBM SPSS Statistics. Descriptive statistics were employed to summarize participants' characteristics. Chi-square tests and frequencies were calculated and employed to assess differences in food ordering behaviors and related outcomes between the control and experimental groups.

Ethical Considerations

Full Ethical Approval from the Campus Fryslân's ethics committee was attained. However, I believe it is important to highlight my positionality in this research. My commitment to veganism has driven my interest in this topic and this research. I believe that

veganism can offer a more sustainable, ethical, and healthy dietary choice. This bias has influenced my decision for the topic of this study, however, it did not influence how I conducted the research process. I ensured objectivity, integrity and impartiality in my research findings.

Results

This research aims to answer the research question:

"*Does changing the standard menu format to promote plant-based options as the default choice lead to more plant-based orders?*"

Food Ordering Behavior

The food ordering behavior of participants was assessed by examining the significance and frequency of vegan and non-vegan orders between the control group, which presented the omnivore diet as the norm; and the experimental group, which promoted plant-based options as the standard. After conducting a thorough analysis of each food section of the menu: chi-square tests revealed significant differences within the appetizers (x^2 (1, N = 110) = 10.181, p = .001) and drinks sections (x^2 (1, N = 110) = 6.174, p = .013). Participants in the experimental condition significantly chose more vegan appetizers (81%) than in the control condition (53%) (see Figure 2), as well as vegan drinks (93%) than those in the control group (77%) (see Figure 3).

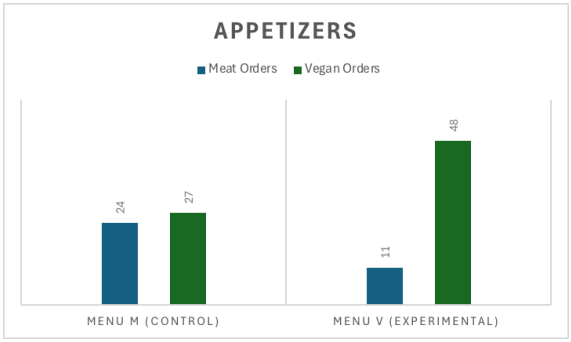

Figure 2: Appetizers Orders

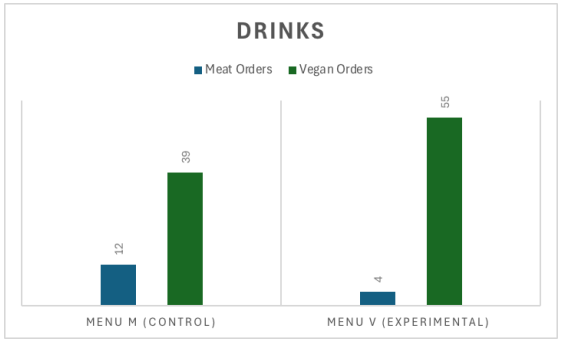

Figure 3: Drinks Orders

For one appetizer and the drinks containing milk, participants were asked to specify their preference between vegan and non-vegan options, whether it being the standard or alternative. However, not all participants provided this information. Therefore, an additional analysis was conducted to assess the significance of the results excluding data from participants who did not specify their preference. The results of this analysis showed no significant difference (appetizers: x^2 (1, N = 89) = 1.380, p = .240); (drinks: x^2 (1, N = 97) = .416, p = .519). As a result, it can be assumed that participants who did not indicate their preference intended to select the standard option relative to each menu.

In the main dishes and desserts sections, chi-square tests did not reveal significant differences (main dishes: x^2 (1, N = 110) = 1.120, p = .290); (desserts: x^2 (1, N=110) = .877, p = .349). However, descriptive data showed that participants exposed to the experimental condition selected more vegan main dishes (61%), compared to those exposed to the control condition (51%). The same is seen in the desserts section, where participants in the experimental group ordered more vegan options (44%) than those in the control group (35%). Even though these differences are not statistically significant, they demonstrate a trend on the descriptive level: a bigger amount of vegan main dishes and desserts were ordered in the

experimental group compared to the control group, as shown in Figure 5 and Figure 6.

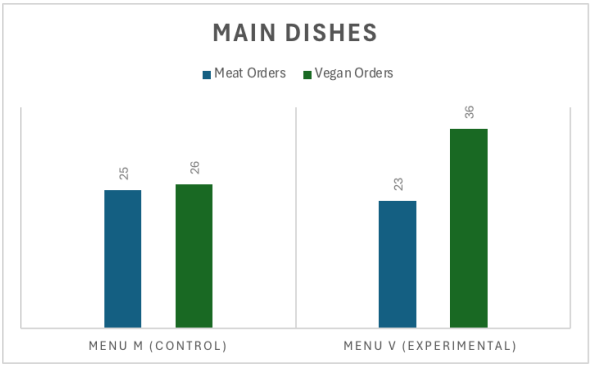

Figure 5: Main Dishes Orders

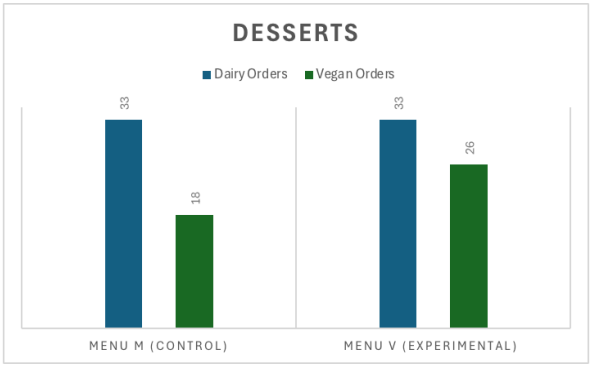

Figure 6: Desserts Orders

Campus Fryslân

When making a distinction between participants who have attended Campus Fryslân and those who have not, a significant difference can be noticed in the appetizers section: individuals from the Campus ordered significantly more vegan dishes than participants who never attended the Campus (x^2 (1, N = 110) = 12.206, p = .001). However, for the remaining sections of the menu, the observed results were statistically insignificant (main dishes: x^2 (1, N = 110) = .262, p = .609)); (desserts: x^2 (1, N = 110) = 2.333, p = .127)); (drinks: x^2 (1, N = 110) = .759, p = .384)).

The descriptive frequencies of vegan orders between Campus Fryslân participants and non-Campus Fryslân participants can be found in Table 1. The table shows a higher frequency of vegan main dishes and desserts selected by Campus participants compared to non-Campus participants in the experimental condition. Similarly, in the control condition, Campus Fryslân members ordered a higher percentage of vegan main dishes compared to non-Campus Fryslân members. On the other hand, vegan desserts in the control group were picked less frequently from members enrolled at the Campus compared to non-Campus Fryslân members. Lastly, in

the drinks section, a lower percentage of vegan orders was picked from Campus Fryslân participants both for the experimental and control groups.

Table 1

Frequencies of Vegan Orders between Campus Fryslân and Non-Campus Fryslân members

	Campus Fryslân		Non-Campus Fryslân	
	Experimental	Control	Experimental	Control
Appetizers	100%	59%	69%	48%
Main Dishes	79%	73%	49%	35%
Desserts	54%	32%	37%	38%
Drinks	83%	73%	100%	79%

Diets

Vegans, Vegetarians & Pescatarians. When examining the variations in orders across different diets, the chi-square tests for vegans, vegetarians, and pescatarians showed either insignificant or insufficient results across all sections of the two different menus.

Vegans: (appetizers: x^2 (1, N = 5) = 1.875, p = .171)); (main dishes: insufficient data)); (desserts: insufficient data)); (drinks: x^2 (1, N = 5) = 1.875, p = .171)). For descriptive data regarding vegans, see Table 2.

Vegetarians: (appetizers: x^2 (1, N = 24) = 1.739, p = .187)); (main dishes: insufficient data)); (desserts: x^2 (1, N = 24) = .411, p = .521)); (drinks: x^2 (1, N = 24) = .145, p = .703)). For descriptive data regarding vegetarians, see Table 3.

Pescatarians: (appetizers: insufficient data), (main dishes: insufficient data)), (desserts: x^2 (1, N = 6) = 3.000, p = .083)), (drinks: insufficient data). For descriptive data regarding pescatarians, see Table 4.

Flexitarians & Omnivores. A significant difference was found in flexitarians' ordering behavior in the appetizers section: individuals from the experimental group ordered significantly more vegan dishes than those in the control group (x^2 (1, N = 19) = 4.866, p = .027)). The Fisher's Exact Test also supports this result (p = 0.040), indicating a strong association between the menu type and the type of order. For the omnivores' group, the chi-square test is marginally non-significant (x^2 (1, N = 56) = 3.451, p = .063)), suggesting that there might be a trend indicating an increased selection of vegan dishes in the experimental group, but not enough evidence to conclusively state a difference in comparison to the control group. However, when looking at the other menu categories, the results are insignificant for both flexitarians and omnivores.

Flexitarians: (main dishes: x^2 (1, N = 19) = .024, p = .876)); (desserts: x^2 (1, N = 19) = 2.574, p = .109)); (drinks: x^2 (1, N = 19) = 2.039, p = .153)). For descriptive data regarding flexitarians, see Table 5.

Omnivores: (main dishes: x^2 (1, N = 56) = 1.168, p = .280)); (desserts: x^2 (1, N = 56) = .573, p = .449)); (drinks: x^2 (1, N = 56) = 2.682, p = .101)). For descriptive data regarding omnivores, see Table 5.

Table 2

Frequencies of Vegan Orders among Vegans

	Experimental Condition	Control Condition
Appetizers	100%	50%
Main Dishes	100%	100%
Desserts	100%	100%
Drinks	100%	50%

Table 3

Frequencies of Vegan Orders among Vegetarians

	Experimental Condition	Control Condition
Appetizers	100%	89%
Main Dishes	100%	100%
Desserts	47%	33%
Drinks	93%	89%

Table 4

Frequencies of Vegan Orders among Pescatarians

	Experimental Condition	Control Condition
Appetizers	100%	100%
Main Dishes	100%	100%
Desserts	100%	33%
Drinks	100%	100%

Table 5

Frequencies of Vegan Orders among Flexitarians

	Experimental Condition	Control Condition
Appetizers	89%	40%
Main Dishes	67%	70%
Desserts	56%	20%
Drinks	89%	60%

Table 6

Frequencies of Vegan Orders among Omnivores

	Experimental Condition	Control Condition
Appetizers	65%	41%
Main Dishes	31%	19%
Desserts	28%	37%
Drinks	93%	78%

Overall, the results show a statistically significant difference in the number of vegan appetizers ordered by members of Campus Fryslân compared to those who are not. As indicated in Table 1, the descriptive statistics for main dishes and desserts confirm that individuals from the Campus ordered a higher amount of vegan dishes in the experimental condition compared to the control one.

The results for vegans, vegetarians, and pescatarians are not statistically significant. However, a statistically significant difference is observed in the vegan appetizers ordered by flexitarians. Additionally, a marginally statistically significant difference is observed in the appetizers ordered by omnivores, as supported by the descriptive data. The results for the main dishes, desserts, and drinks are statistically insignificant. Nevertheless, the descriptive data support the initial hypothesis that participants exposed to the experimental condition would order more vegan dishes than the ones in the control condition, with the exception of omnivores in the desserts section (see Table 5 and Table 6).

Discussion

Significant improvements can be made in making consumers' lives more sustainable and healthy by promoting the adoption of a plant-based diet. This study employs an

innovative approach that tests the effectiveness of the combination of changing default options and the graphic design of a restaurant menu in favor of veganism, to alter the perceived social norms in the minds of consumers and consequently their food choices. This research's primary objective aimed to determine whether changing the menu format could lead to a significant increase in plant-based orders among restaurant consumers. The findings partially support this hypothesis.

The current findings build upon previous research that provided initial evidence that a subtle re-design of a restaurant menu to switch the default from animal-based to plant-based can be effective (Campbell-Arvai et al., 2014); and that people are more likely to choose default options due to a combination of inertia and perceived social norms (Taufik, 2022; De Vaan et al., 2019). Specifically, participants exposed to the experimental menu selected significantly more plant-based appetizers and drinks compared to those presented with the control menu. No significant differences were found for main dishes and desserts. However, the descriptive frequencies revealed that participants presented with the experimental menu ordered more vegan main dishes and desserts compared to the ones presented with the control one. The lack of significant results for main dishes and desserts could be attributed to the small number of participants, and to differences in taste preferences related to the dishes presented, which might have resulted in many participants selecting specific dishes for their attractiveness, rather than the social norms of the menu. The significant results in the appetizers and drinks sections may be attributed to the fact that many individuals picked dishes that were either vegan (in the experimental group) or non-vegan (in the control group) but could be requested non-vegan or vegan to meet customers' preferences. This suggests that if individuals are given both vegan and non-vegan options of the same dish, they tend to order

the standard option more. This finding aligns with previous research, which has shown that offering an all-vegetarian menu with the possibility to add meat to each dish can increase the uptake of vegetarian dishes (De Vaan et al., 2019). Therefore, to promote plant-based alternatives, it is recommended to offer plant-based dishes with the option of adding meat on request, rather than the other way around. However, similar results were not observed in the main dishes section. This discrepancy might be attributed to the placement of the *chef's favorite* star on dishes on the menu. In the appetizers section, the dish that was vegan by default, with the option to add meat on request, was marked as the *chef's favorite*, potentially leading to a higher number of participants who chose it. This was not the case for the main dishes, where the *chef's favorite* dish was a vegan dish without the option to be requested with meat. This suggests that signaling a preference for plant-based options in the menu increases consumers' choices towards that option.

The Influence of Social Norms

Dietary choices are significantly shaped and influenced by the recognized and accepted social norms within society (Nguyen & Platow, 2021). Eating meat often serves as a way for people to conform to cultural norms and express their social identification with their nation (Bryant et al., 2022). However, minority groups such as vegans have the potential to challenge the status quo of the widely accepted norms and influence the majority by providing new social norms (Bolderdijk & Jans, 2021). This research demonstrated that placing vegan dishes at the top of each menu section, marking animal-based dishes as the alternative, while promoting plant-based options as the *chef's favorite,* in combination with manipulating the graphic design, has proven to be an effective strategy to alter social norms

and decision-making in favor of veganism. As hypothesized, presenting plant-based dishes as the social norm leads to an increased selection of these options. Consequently, this study supports the notion that social influence can be employed to promote more sustainable and ethical eating habits (Nguyen & Platow, 2021; Bryant et al., 2022).

Campus Fryslân's Social Norms

Overall, the analysis reveals that members of Campus Fryslân tended to order more vegan dishes than participants from outside the Campus.

Campus Fryslân's goals are inspired by the UN's Sustainable Development Goals (*Campus Fryslân*, 2023), which are reflected and integrated in almost all of its courses. Consequently, individuals within this campus are highly aware of environmental sustainability and the scale of the emissions related to animal products. As a result, a significant amount of students identify as either vegan, vegetarian, or flexitarian. The findings indicate that 48% of people from Campus Fryslân followed one of these diets, compared to only 11% of individuals outside of the Campus. This disparity suggests that the social norms on the preferred diets inside the Campus differ from outside of it. The prevalence of plant-based diets among Campus Fryslân members might explain the higher selection of vegan and vegetarian dishes. In fact, participants from the Campus ordered significantly more vegan appetizers than participants outside of it. The descriptive data for main dishes and desserts supported this initial evidence, even though the results were statistically insignificant.

Campus Fryslân serves as an example of a subculture where veganism, as a minority, has successfully challenged the prevailing social norm of meat consumption. This shift in social norms has led to an increased selection of vegan dishes. These findings support existing

literature (Bolderdijk & Jans, 2021; Judge et al., 2022), suggesting that vegans, as part of a minority group, can indeed contribute to a potential social change by presenting an alternative path to the accepted norm of eating meat.

Diets

Participants following different diets have shown different susceptibility to the manipulation of the menu.

For vegans, vegetarians, and omnivores, the type of menu did not show a statistically significant effect on the type of order. The pescatarian group lacked sufficient data for a meaningful outcome. However, it was anticipated that the results for vegans would be insignificant, as they would consistently order vegan dishes in both the experimental and control groups due to their dietary choices, regardless of the social norms of the menus. The same applies to vegetarians and pescatarians for the appetizers and main dishes, but not for the desserts and drinks sections, as their diets include the consumption of dairy.

However, the results of this study indicate that there is a significant association between the type of menu and the ordering behavior of flexitarians in the appetizers section. This finding suggests that flexitarians are more likely to choose certain appetizers based on the menu presentation, highlighting the impact of the manipulation of social norms on their food choices. In contrast, the ordering behavior of omnivores in the appetizers section showed only a marginal trend towards significance, indicating a possible, but not conclusive, influence of menu design. This suggests that while omnivores may be somewhat influenced by the menu presentation, the effect is not strong enough to be considered statistically significant.

The difference in the number of vegan orders between flexitarians and omnivores might be related to flexitarians being already aware of the impacts of meat consumption, therefore having a different approach to meat consumption. According to the Oxford English Dictionary (2023), a flexitarian is a “flexible vegetarian”, and it refers to an individual who follows a primarily but not strictly vegetarian diet. Flexitarians tend to be motivated by mainly ethical and health reasons (Sheen et al., 2023). Studies have shown that on average, people identifying with this diet consume meat around two to three times a week, but large variations exist among consumers (Dagevos, 2021). Therefore, the overall higher vegan appetizers, main dishes and desserts ordered from flexitarians compared to omnivores in the experimental group, might be due to the general reduced meat intake of flexitarians. This might also infer that flexitarians are more susceptible to the manipulations of the menu and the influence of vegan social norms. However, omnivores in the experimental group indeed ordered more vegan drinks than flexitarians. This might be explained by a higher selection between omnivores for drinks that are vegan by default, such as espresso and americano, which influenced the results. Future research should test the difference in orders that contain milk and can therefore be ordered either vegan or not.

Limitations and Future Research

This study presents several limitations that must be acknowledged. First of all, the online experimental setting might not fully capture the complexities of a real-life experience in a restaurant. The Online Disinhibition Effect discussed by Suler (2004) suggests that some people self-disclose or act to different intensities in online compared to in-person settings. This is due to several factors, including anonymity, invisibility, and the absence of

face-to-face interaction (Suler, 2004). Therefore, the results of this study might turn out differently if tested in an actual restaurant. Further research should implement the manipulation of social norms, default options and graphic design in menus of a real restaurant, and assess the frequency of actual vegan orders of customers. Additionally, the sample size of this experiment was relatively small and might have therefore influenced the insignificance of some results. An implemented research that involves a bigger sample size would result in a more precise outcome. Moreover, people's dish choices might have been led by personal preference rather than by the social norms presented in the menu. Certain dishes might have generally appeared more appealing regardless of the menu's social norm. It's important to recognize that individual taste preferences have undoubtedly played a role in the experiment. To diminish the potential influence of personal preferences, future research should first pre-test the attractiveness of the variety of dishes presented, and standardize it in a way that ensures lower taste biases in the selection of dishes.

Moreover, future research should address differences across cultures, as those might influence both the social norms that impact individuals' decisions and personal preferences, related to the cultural and national identity of participants. Additionally, due to an oversight and time constraints, demographic data from participants were not collected, thus reducing the scope and generalizability of the findings. Demographics should be taken into account in future studies.

Eventually, other factors of the menu should be studied more in depth, such as the influence of menu descriptions, and the role of the people participants are dining with. According to Ruhizat et al. (2021), for instance, the language used in menus influences the customers' decisions when ordering food or drinks. In this study the language of the menu

was English, but 42% of participants reported not speaking English on a daily basis. This might have had an influence in the perception of the dishes for these participants.

Moreover, the social context impacts food choices in restaurants, as it relates back to conformity and group dynamics (Latane, 1981; Peters & Remaud, 2020); and it exerts a greater influence on food choice than consumers' personal preference (Marshall, 1993; Peters & Remaud, 2020). With participants in this study completing the questionnaire by themselves, the influence of one's social surroundings was not taken into account. Future research should address the role of other people's food choices in restaurants when manipulating menus' social norms to promote plant-based consumption.

Conclusion

I will restate once again the research question examined in this research: "*Does changing the standard menu format to promote plant-based options as the default choice lead to more plant-based orders?*". Based on the quantitative analysis conducted, this research has found significant results in how simple interventions such as changing default options and altering the menu's graphic design, can prompt consumers towards more plant-based choices, without compromising their freedom of choice or making them feel threatened about changing their diet. To answer the research question, manipulating the perceived standard format of a menu has been found to increase plant-based orders. However, the results were statistically significant only in the appetizers and drinks sections of the menu. Through descriptive analysis, the frequencies of plant-based main dishes and desserts were also in favor of the initial hypothesis, even though statistically insignificant. While research on promoting plant-based food exists, this study provides valuable insights on the combination of

default options and menu graphic design on food choices. It forms a basis for further research on implementing pro-environmental behavior through the manipulation of social norms. Implementing such strategies in restaurants' menus could contribute to reducing meat consumption and its associated negative impacts, including greenhouse gas emissions, animal suffering, and health risks related to high meat intake.

References

Ambrose, G., Harris, P., & Ball, N. (2020). *The Fundamentals of Graphic Design* (2nd ed.).

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgements. In H. Guetzkow (Ed.), *Groups, leadership and men* (pp. 177–190). Pittsburgh, PA: Carnegie.

Asch, S. E. (1995). Opinions and social pressure. *Scientific American, 193*, 31–35.

Bolderdijk, J. W., & Jans, L. (2021). Minority influence in climate change mitigation. Current Opinion in Psychology, 42, 25–30.

https://doi.org/10.1016/j.copsyc.2021.02.005

Bryant, C., Prosser, A. M. B., & Barnett, J. (2022). Going veggie: Identifying and overcoming the social and psychological barriers to veganism. *Appetite*, *169*, 105812.

https://doi.org/10.1016/j.appet.2021.105812

Campbell-Arvai, V., Arvai, J., Kalof, L., University of Calgary, Decision Research, & Michigan State University. (2014). Motivating Sustainable food choices: The role of nudges, value orientation, and information provision [Journal-article]. *Environment and Behavior*, *46*(4), 453–475.

https://doi.org/10.1177/0013916512469099

Campus Fryslân. (2023, December 22). University of Groningen. https://www.rug.nl/cf/campus-fryslan-sea?lang=en

Cash, P., Holm-Hansen, C., Olsen, S. B., Christensen, M. L., & Trinh, Y. M. T. (2017). Uniting individual and collective concerns through design: Priming across the senses. *Design Studies*, *49*, 32–65. https://doi.org/10.1016/j.destud.2017.01.002

Chai, Voort, Grofelnik, Eliasdottir, Kloss & Perez-Cueto. (2019). iew Which Diet Has the Least Environmental Impact on Our Planet? A Systematic Review of Vegan, Vegetarian and Omnivorous Diets. Sustainability. https://doi.org/10.3390/su11154110

Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 201–234). San Diego, CA: Academic Press.

Cialdini, R. B., & Trost, M. R., & Newsom, J. T. (1995). Preference for consistency: The development of a valid measure and the discovery of surprising behavioral implications. *Journal of Personality and Social Psychology, 69*, 318–328.

Dagevos, H. (2021). Finding flexitarians: Current studies on meat eaters and meat reducers.

Trends in Food Science & Technology, 114, 530–539. https://doi.org/10.1016/j.tifs.2021.06.021

Davidai, S., Gilovich, T., & Ross, L. D. (2012). The meaning of default options for potential organ donors. Proceedings of the National Academy of Sciences, 109(38), 15201–15205. https://doi.org/10.1073/pnas.1211695109

Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational socialninfluences upon individual judgment. *Journal of Abnormal and Social Psychology, 51*, 629–636.

de Vaan, J. M., van Steen, T., & Müller, B. C. N. (2019). Meat on the menu?: How the menu structure can stimulate vegetarian choices in restaurants. Journal of Applied Social Psychology, 49(12), 755–766. https://doi.org/10.1111/jasp.12632

European Commission, 2006. Environmental impact of products (EIPRO): Analysis of the life cycle environmental impacts related to the total final consumption of the EU25. European Commission Technical Report EUR 22284 EN.

Everett, J. A., Caviola, L., Kahane, G., Savulescu, J., & Faber, N. S. (2014). Doing good by doing nothing? The role of social norms in explaining default effects in altruistic contexts. *European Journal of Social Psychology*, *45*(2), 230–241.

https://doi.org/10.1002/ejsp.2080

FAO, 2006. Livestock's Long Shadow — Environmental Issues and Options. Food and Agriculture Organisation, Rome, Italy.

Festinger, L. (1950). Informational social communication. *Psychological Review, 57*, 271–282.

Greger, M., MD, & Stone, G. (2016). *How not to die: Discover the Foods Scientifically Proven to Prevent and Reverse Disease*. Pan Macmillan.

Hewstone, M., & Stroebe, W., (Eds.). (2020). An Introduction to Social Psychology (7th Ed.). *670–701, 711–714*. Chichester: John Wiley & Sons.

Huang, L., & Lu, J. (2015). Eat with your Eyes: Package Color Influences. In The Marketing Management Association, *Marketing Management Journal* (Vols. 25–25, Issue 2, pp. 71–87).

Judge, M., Fernando, J. W., & Begeny, C. T. (2022). Dietary behaviour as a form of collective action: A social identity model of vegan activism. Appetite, 168, 105730. https://doi.org/10.1016/j.appet.2021.105730

Kay, A. C., Wheeler, S., Bargh, J. A., & Ross, L. (2004). Material priming: The influence of

mundane physical objects on situational construal and competitive behavioral choice. *Organizational Behavior and Human Decision Processes*, *95*(1), 83–96. https://doi.org/10.1016/j.obhdp.2004.06.003

Kolosnichenko, M., Kolisnyk, O., Gula, Y., Dubrivna, A., & Tetyana Nikolayeva. (2022). Graphic design as an indicator of social transformations. *Revista De La Universidad Del Zulia*, *Año 13 N° 38*, 893–915.

Kortetmäki, Oksanen. (2021). Is there a convincing case for climate veganism? https://link-springer-com.proxy-ub.rug.nl/article/10.1007%2Fs10460-020-10182-x

Latane, B. (1981). The Psychology of Social Impact. American Psychologist, 36(4), 343–356. https://doi.org/10.1037/0003-066X.36.4.343.

Loughnan, S., Haslam, N., & Bastian, B. (2010b). The role of meat consumption in the denial of moral status and mind to meat animals. *Appetite*, *55*(1), 156–159. https://doi.org/10.1016/j.appet.2010.05.043

Malta, I., Hoeks, J., & Graça, J. (2023). Communicating Trends in Sustainability Transitions: Minority Beliefs and Dynamic Norms about Plant-Based Food Consumption. *Environmental Communication*, *18*(3), 339–350. https://doi.org/10.1080/17524032.2023.2280751

Marshall, D. W. (1993). Appropriate Meal Occasions: Understanding Conventions and Exploring Situational Influences on Food Choice. The International Review of Retail, Distribution and Consumer Research, 3(3), 279–301. https://doi.org/10.1080/09593969300000019

McKenzie, C., Liersch, M. J., & Finkelstein, S.R (2006). Recommendations implicit in policy defaults. Psychological Science, 17, 414. https://doi.org/10.1111/j.1467-9280.2006.01721.x

Moscovici, S. (1980) Toward a theory of conversion behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 209–239). New York: Academic Press.

North, M., Kothe, E., Klas, A., & Ling, M. (2021). How to define "Vegan": An exploratory study of definition preferences among omnivores, vegetarians, and vegans. *Food Quality and Preference*, *93*, 104246. https://doi.org/10.1016/j.foodqual.2021.104246

Nguyen, A., & Platow, M. J. (2021). "I'll eat meat because that's what we do": The role of national norms and national social identification on meat eating. *Appetite*, *164*, 105287. https://doi.org/10.1016/j.appet.2021.105287

Oxford English Dictionary. (2023). Flexitarian (n.).

https://doi.org/10.1093/OED/5156119824

Parkin, B., & Attwood, S. (2022). Menu design approaches to promote sustainable vegetarian food choices when dining out. *Journal of Environmental Psychology*, *79*, 101721. https://doi.org/10.1016/j.jenvp.2021.101721

Peters, K., & Remaud, H. (2020). Factors influencing consumer menu-item selection in a restaurant context. Food Quality and Preference, 82, 103887. https://doi.org/10.1016/j.foodqual.2020.103887

Piazza, J., Ruby, M. B., Loughnan, S., Luong, M., Kulik, J., Watkins, H. M., & Seigerman, M. (2015). Rationalizing meat consumption. The 4Ns. In *Appetite* [Journal-article]. http://dx.doi.org/10.1016/j.appet.2015.04.011

Richi, E. B., Baumer, B., Conrad, B., Darioli, R., Schmid, A., & Keller, U. (2015). Health Risks Associated with Meat Consumption: A Review of Epidemiological Studies. *International Journal for Vitamin and Nutrition Research*, *85*(1–2), 70–78. https://doi.org/10.1024/0300-9831/a000224

Roser, M. (2024, January 11). *How many animals get slaughtered every day?* Our World in Data. https://ourworldindata.org/how-many-animals-get-slaughtered-every-day

Ruhizat, S. B., Rahimi, S. N. B. C., Ngali, N. B., & Rahmat, N. B. (2021). The influence of menu description on customer purchase intention. International Journal of Academic Research in Business & Social Sciences, 11(13). https://doi.org/10.6007/ijarbss/v11-i13/8552

Seo, J. Y., & Scammon, D. L. (2017). Do green packages lead to misperceptions? The influence of package colors on consumers' perceptions of brands with environmental claims. *Marketing Letters*, *28*(3), 357–369. https://doi.org/10.1007/s11002-017-9420-y

Sheen, F., Lim, A. J., & Forde, C. G. (2023). Diversity among flexitarian consumers; stratifying meat reducers by their underlying motivations to move to a plant-based diet. Food Quality and Preference, 112, 105022. https://doi.org/10.1016/j.foodqual.2023.105022

Sucapane, D., Roux, C., & Sobol, K. (2021). Exploring how product descriptors and packaging colors impact consumers' perceptions of plant-based meat alternative products. *Appetite*, *167*, 105590. https://doi.org/10.1016/j.appet.2021.105590

Suler, J. (2004). The online disinhibition effect. In CYBER PSYCHOLOGY & BEHAVIOR (No. 3; Vols. 7–7). Mary Ann Liebert, Inc. https://drleannawolfe.com/Suler-TheOnlineDisinhibitionEffect-2004.pdf

Taufik, D., Bouwman, E., Reinders, M. J., & Dagevos, H. (2022). A reversal of defaults: Implementing a menu-based default nudge to promote out-of-home consumer adoption of plant-based meat alternatives. *Appetite (Print)*, *175*, 106049. https://doi.org/10.1016/j.appet.2022.106049

Appendix

Appendix 1: Explanation Provided to Participants Before the Survey

My name is Lucia Wajchenberg and I am a third year student of the BSc Global Responsibility and Leadership of University of Groningen, Campus Fryslân. In this survey, I am interested in your food selections to get a better understanding of people's taste preferences. Your responses will provide valuable data for my research into consumer behavior. Please be aware that there are no right or wrong answers, I am interested in your choice.
The aim of this study is to gather information on food preferences in restaurants, but I will reveal to you the specific details of the project after you have completed the questionnaire. This is to ensure that your responses are not influenced by knowing the exact focus of this research.